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Sympodiosynnema, a new genus of dematiaceous hyphomycetes from southern China

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Abstract — *Sympodiosynnema* gen. nov. is illustrated and described from dead stems of an unidentified plant in Hainan, southern China. The genus is characterized by solitary dry naviculiform conidia, sympodially proliferating conidiogenous cells, and synnematous conidiophores.

Key words — *Sympodioplanus*, conidial fungi, taxonomy

Introduction

During a survey of dematiaceous hyphomycetes colonizing diverse plant habitats from the forests of Hainan, China, a fungus that does not match any existing genera was collected growing on unidentified dead twigs. A review of the literature and morphological studies revealed that it represents an undescribed genus (Ellis 1971, 1976, Subramanian 1971, Matsushima 1975, 1983, 1985, 1989, 1993, 1995, Carmichael et al. 1980, Castañeda-Ruiz 1986, Castañeda-Ruiz & Kendrick 1990a,b, 1991, Wu & Zhuang 2005, Seifert et al. 2011).

The new genus, *Sympodiosynnema*, is described and illustrated. It is characterized by synnematous conidiophores and polyblastic and sympodially proliferating conidiogenous cells that produce solitary naviculiform dry conidia. Specimens are deposited in the Herbarium of Department of Plant Pathology, Shandong Agricultural University, Taian, China (HSAUP) and the Mycological Herbarium, Institute of Microbiology, Chinese Academy of Sciences, Beijing, China (HMAS).

Sympodiosynnema J.W. Xia & X.G. Zhang, **gen. nov.**

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Differs from *Sympodioplanus* by possessing synnematous conidiophores.

Type species: *Sympodiosynnema elegans* J.W. Xia & X.G. Zhang

Etymology: *Sympodio-* referring to the similar genus *Sympodioplanus; synnema*, referring to the synnematous conidiophores.

Asexual fungus. Colonies on the natural substrate effuse, brown. Mycelium mostly immersed, composed of branched, septate, hyaline to brown, smooth hyphae. Conidiomata synnematal unbranched, erect, with brown stalks, consisting of compact aggregation of parallel conidiophores. Conidiophores macronematous, erect, unbranched, septate, pale brown to brown, divergent towards the distal part of the synnema. Conidiogenous cells polyblastic, integrated, terminal, sympodial, hyaline to pale brown. Conidial secession schizolytic. Conidia solitary, dry, naviculiform, euseptate, pale brown.

Sympodiosynnema elegans J.W. Xia & X.G. Zhang, sp. nov. Fig. 1

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Differs from *Sympodioplanus capensis* by its synnematous conidiophores with sympodial proliferations and its larger conidia and from *S. goaensis* by its synnematous conidiophores with sympodial proliferation and its more septate conidia.

Type: China, Hainan Province: Jianfengling, on dead stems of unidentified broadleaf tree, 22 Apr. 2014, J.W. Xia (**Holotype**, HSAUP H6447; **isotype**, HMAS 245682).

Etymology: *elegans*, referring to the elegant conidia.

Colonies on the natural substrate effuse, brown. Mycelium mostly immersed, composed of branched, septate, hyaline to brown, smooth, 1.5–3 µm wide hyphae. Conidiomata synnematal, unbranched, erect, with brown stalks, consisting of a compact aggregation of parallel conidiophores, terminating in brown fertile heads, ≤300 µm long, 25–35 µm wide in the middle with a base ≤45 µm wide and an apex 110 µm wide. Conidiophores macronematous, erect, unbranched, septate, pale brown to brown, 3–5 µm wide, divergent towards the distal synnema. Conidiogenous cells polyblastic, integrated, terminal, sympodial, thin-walled, smooth, hyaline to pale brown, bearing flat scars, sometimes slightly obscured. Conidial secession schizolytic. Conidia solitary, dry, naviculiform, 3–5-euseptate, smooth, pale brown, 22.5–28 × 6–8 µm.

Comments – *Sympodiosynnema* demonstrates unique morphological and ontogenetic features. Its macronematous conidiophores form distinct synnemata with a sympodial proliferation of the conidiogenous cells and produce solitary dry naviculiform conidia. Conidial fungi characterized by sympodial proliferation represent a large group, among which only *Sympodioplanus*

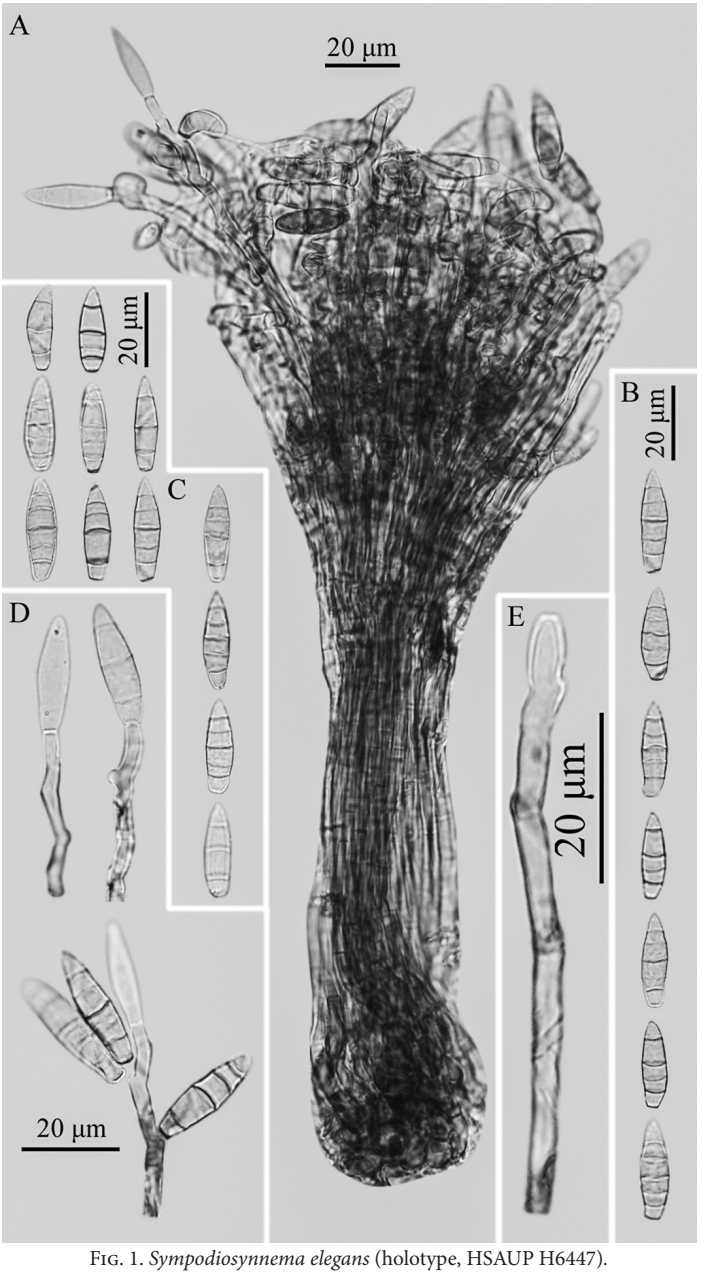

Fig. 1. *Sympodiosynnema elegans* (holotype, HSAUP H6447).
A. synnema; B, C. conidia; D. conidiogenous cells and conidia;
E. conidiogenous cells and conidiogenous loci.

R.C. Sinclair & Boshof (Sinclair et al. 1997) has conidiogenous cells and conidia that are morphologically similar to *Sympodiosynnema. Sympodioplanus,* however, is distinguished by mononematous conidiophores.

In conidial shape, *Sympodiosynnema elegans* is most similar to *Sympodioplanus capensis* R.C. Sinclair & Boshof, which differs by its smaller conidia (13–16 × 2.5–4 µm; Sinclair et al. 1997). The also similar *S. goaensis* J. Pratibha can be distinguished by its less septate conidia (1–2-septate; Pratibha 2013).

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